

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (currently amended): An optoelectronic circuit board comprising:

a board having top and bottom surfaces;

an optical fiber contained in said board between said top and bottom surfaces[[:]], said fiber terminating in a fiber end facet on a side wall of a hole defined in one or both of said surfaces; [[and]]

an optical emitter or detector mounted on one of said surfaces and electrically connected to electrical conductors on said one of said surfaces[[:]], said optical emitter or detector being configured to emit or detect a light signal along ~~having~~ an optical axis ~~directed into~~ in said hole; and

a reflector ~~supported~~ positioned in said hole and configured ~~for reflecting to redirect~~ the light signal along said optical axis substantially radially about said optical axis towards said fiber end facet.

Claim 2 (original): The circuit board of Claim 1 wherein said optical emitter or detector and said reflector are assembled to each other for mounting as an optoelectronic module to said board.

Claim 3 (original): The circuit board of Claim 2 wherein said optoelectronic module is mounted to said one of said surfaces and said reflector is suspended in said hole from said one of said surfaces.

Claim 4 (canceled)

Claim 5 (original): The circuit board of Claim 4 wherein said reflector is a reflecting surface of revolution about said optical axis.

Claim 6 (original): The circuit board of any of Claims 1 through 4 wherein said reflector and said optical emitter or detector are assembled to a plug body sized and shaped to fit in said hole for positioning said reflector in optical alignment with said fiber facet.

Claim 7 (original): The circuit board of Claim 6 wherein said plug body is of light transmitting material and said reflector is an internally reflecting surface of said plug body.

Claim 8 (original): The circuit board of Claim 7 wherein said plug body also defines a lens for condensing light between said reflector and said emitter or detector.

Claim 9 (original): The circuit board of Claim 1 further comprising a plurality of optical fibers in said board terminating in a plurality of fiber end facets spaced on said side wall, said reflector being arranged and configured for reflecting said optical axis onto all of said fiber end facets.

Claim 10 (currently amended): An optoelectronic module comprising:
an optical device ~~for emitting or detecting~~ configured to emit or detect a light signal along a first optical path;
an electronic circuit connected ~~for supplying~~ to supply a drive signal to said optical device or ~~for receiving~~ to receive a signal detected by said optical device; and
an optical reflector ~~for reflecting~~ configured to redirect said light signal substantially radially about said first optical path along a second optical path ~~generally~~ substantially transverse to said first optical path;
said optical device, said electronic circuit and said optical reflector being assembled ~~for mounting~~ so as to be mounted as a unit to a main circuit board.

Claim 11 (original): The optoelectronic module of Claim 10 wherein said first optical path is directed for entering a hole in said main circuit board in a mounted condition of said

assembly and said optical reflector is arranged for directing said second optical path towards a side wall of said hole.

Claim 12 (currently amended): The assembly of Claim 10 further comprising a substrate[[,]] to which said optical device, said electronic circuit and said optical reflector being are mounted ~~to said substrate~~.

Claim 13 (currently amended): The optoelectronic module of Claim [[1]] 10 wherein said optical reflector is a plane reflector.

Claim 14 (original): The optoelectronic module of Claim 10 wherein said optical reflector is a concave reflector.

Claim 15 (original): The optoelectronic module of Claim 10 wherein said optical reflector is a convex reflector.

Claim 16 (original): The optoelectronic module of Claim 10 wherein said optical reflector is a conical reflector.

Claim 17 (original): The optoelectronic module of Claim 10 wherein said optical reflector is a paraboloid of revolution reflector.

Claim 18 (original): The optoelectronic module of Claim 10 wherein said optical reflector is a pyramidal reflector.

Claim 19 (original): The optoelectronic module of Claim 10 wherein said optical device comprises one or more light emitters.

Claim 20 (original): The optoelectronic module of Claim 10 wherein said one or more light emitters comprises one or more laser diodes.

Claim 21 (original): The optoelectronic module of Claim 10 wherein said optical device comprises an array of light emitters or light detectors.

Claim 22 (original): The optoelectronic module of Claim 10 wherein said optical device comprises one or more photodiodes.

Claim 23 (original): The optoelectronic module of Claim 10 further comprising one or more optical lenses interposed between said optical device and said optical reflector.

Claim 24 (original): The optoelectronic module of Claim 23 wherein said one or more optical lenses comprise a convergent lens.

Claim 25 (original): The optoelectronic module of Claim 23 wherein said one or more optical lenses comprise a divergent lens.

Claim 26 (original): The optoelectronic module of Claim 23 wherein said one or more optical lenses and said optical reflector are formed as different surfaces of a unitary optical element of light transmitting material.

Claim 27 (original): The optoelectronic module of Claim 26 wherein said unitary optical element has a lenticular top surface and an internally reflecting bottom surface.

Claim 28 (original): The optoelectronic module of Claim 12 wherein said substrate comprises a printed circuit interconnecting said electronic circuit and said optical device.

Claim 29 (currently amended): The optoelectronic module of Claim 12 further comprising electrical contacts disposed on said substrate ~~for mounting and interconnecting to mount and interconnect~~ said optoelectronic module to a main circuit board.

Claim 30 (original): The optoelectronic module of Claim 29 wherein said electrical contacts are on an underside of said substrate.

Claim 31 (original): The optoelectronic module of Claim 30 wherein said electrical contacts are adapted for surface mounting said assembly to the said main circuit board.

Claim 32 (original): The optoelectronic module of Claim 12 wherein said electronic circuits are mounted to a top of said substrate.

Claim 33 (original): The optoelectronic module of Claim 12 wherein said substrate is a circuit board and said first optical axis is substantially perpendicular to said circuit board.

Claim 34 (currently amended): An optoelectronic module comprising:

a substrate;

an optical device ~~for emitting or detecting~~ configured to emit or detect a light signal along a first optical path;

an electronic circuit connected ~~for supplying to supply~~ to supply a drive signal to said optical device or ~~for receiving to receive~~ to receive a signal detected by said optical device; [[and]]

an optical reflector ~~for reflecting~~ configured to redirect said light signal substantially radially about said first optical path along a second optical path ~~generally~~ substantially transverse to said first optical path; and

electrical contacts;

said optical device, said electronic circuit, said optical reflector and said contacts being assembled to said substrate ~~for mounting said assembly~~ so as to be mounted to a main circuit board such that said first optical path is substantially perpendicular to said main circuit board in a mounted condition ~~of said assembly~~.

Claim 35 (currently amended): A method of making an optoelectronic circuit board, comprising ~~the steps of:~~

embedding an optical fiber between [[said]] top and bottom surfaces of a board; and

making a hole in said board ~~and through said optical fiber~~ so as to cut the optical fiber embedded in said board into segment each terminating in a fiber end facet on a side wall of said hole.

Claim 36 (currently amended): The method of Claim [[36]] 35 further comprising ~~the steps of:~~

mounting an optical emitter or detector to said board with an optical axis directed into said hole; and

~~supporting~~ positioning a reflector in said hole, the reflector being configured to redirect a light signal along ~~for reflecting~~ said optical axis towards said fiber end facet.

Claim 37 (new): An optoelectronic module comprising:

an optical device configured to emit or detect a light signal along a first optical path;

an electronic circuit connected to supply a drive signal to said optical device or to receive a signal detected by said optical device;

an optical reflector configured to redirect said light signal along a second optical path substantially transverse to said first optical path; and

one or more optical lenses interposed between said optical device and said optical reflector;

said optical device, said electronic circuit and said optical reflector being assembled so as to be mounted as a unit to a main circuit board;

said one or more optical lenses and said optical reflector being formed as different surfaces of a unitary optical element of light transmitting material; and

said unitary optical element having a lenticular top surface and an internally reflecting bottom surface.